

CLAIMS


The invention is claimed as follows:

1. A coating apparatus comprising:
5 means for supporting a part;
means positioned adjacent to the support means for applying an atomized coating to a section of the part; and
means positioned adjacent to the support means for measuring the section of the part, wherein the measuring means measures a dimension
10 of a section of the part being coated and the coating means applies an amount of coating to the section of the part based on said dimension measurements and desired final dimension of the section of the part, wherein the measuring means includes a laser generator and a laser receiver, said laser generator positioned adjacent to one side of the support means and said laser receiver
15 positioned adjacent to an opposing side of the support means, wherein the laser generator and laser receiver are each mounted in housing means, wherein each housing means includes a transparent member connected to said housing, and which includes excess coating reducer means positioned adjacent to the transparent member of each housing.
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2. The apparatus of Claim 1, wherein the support means includes a part support.
3. The apparatus of Claim 1, wherein the support means includes a
25 conveyor.
4. The apparatus of Claim 1, wherein the coating means includes at least one sprayer.
- 30 5. The apparatus of Claim 1, which includes an exhaust duct positioned adjacent to the support means.

6. The apparatus of Claim 1, which includes means for displaying the dimension measurements of the section of the part.

7. The apparatus of Claim 1, which includes means for displaying
5 at least one dimensional tolerance level of the section of the part.

8. The apparatus of Claim 1, wherein the excess coating reducer means includes at least one air mover.

10 9. A coating apparatus comprising: 
a part support adapted to support a part;
a laser generator and a laser receiver positioned on opposing
sides of the part support, said the laser generator operable to project a laser
beam at a level of a section of the part supported by the part support, said
15 laser receiver operable to receive portions of the laser beam not blocked by
the section of the part to take measurements of said section of the part;
a laser generator housing which includes a transparent member
though which the laser beam passes through;
an excess coating reducer positioned adjacent to the transparent
20 member of the housing; and
a sprayer positioned adjacent to the part support, said sprayer
operable to apply an amount of coating to the section of the part based on said
measurements and desired dimension of the section of the part.

25 10. The apparatus of Claim 9, which includes an exhaust duct positioned adjacent to the part support.

11. The apparatus of Claim 9, which includes a laser receiver housing which includes a transparent member though which said portions of
30 the laser beam passes through, and a second excess coating reducer positioned adjacent to said transparent member of said housing.

12. The apparatus of Claim 9, wherein the excess coating reducer includes an air mover.

5 13. A coating apparatus comprising:
 a part support;
 a sprayer positioned adjacent to the part support;
 a part measurer including a laser generator and a laser receiver
 positioned on opposing sides of the part support and operable to measure a
 dimension of a section of a part supported by the part support and being
10 coated by the sprayer based on said measurements and a desired dimension
 of the section of the part;
 a laser generator housing including a transparent member which
 protects the laser generator mounted in said housing;
 a first excess coating reducer positioned adjacent to the
15 transparent member of said laser generator housing;
 a laser receiver housing including a transparent member which
 protects the laser receiver mounted in said housing; and
 a second excess coating reducer positioned adjacent to the
 transparent member of laser receiver housing.

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 14. The apparatus of Claim 13, wherein the part support includes a conveyor.

 15. The apparatus of Claim 13, which includes an exhaust duct
25 positioned adjacent to the part support.

 16. The apparatus of Claim 13, wherein the first excess coating reducer includes an air mover.


30 17. The apparatus of Claim 16, wherein the second excess coating reducer includes an air mover.

18. A coating apparatus comprising:
means for supporting a part;
means positioned adjacent to the support means for applying an atomized coating to a section of the part;
- 5 means positioned adjacent to the support for measuring a section of the part, wherein the measuring means is operable to measure a parameter of the section of the part being coated and the coating means is operable to apply an amount of coating to the section of the part based on the parameter measurement and desired parameter measurement of the section
- 10 of the part, wherein the measuring means is mounted in at least one housing which includes a transparent member; and
- excess coating reducer means positioned adjacent to said transparent member to reduce excess coating near the transparent member which could interfere with the measuring means.
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19. The apparatus of Claim 18, wherein the support means includes a part support.
20. The apparatus of Claim 18, wherein the support means includes
- 20 a conveyor.
21. The apparatus of Claim 18, wherein the coating means includes at least one sprayer.
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22. The apparatus of Claim 18, which includes an exhaust duct positioned adjacent to the support means.
23. The apparatus of Claim 18, which includes means for displaying the parameter measurements.
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24. The apparatus of Claim 18, which includes means for displaying the parameter measurements.

25. The apparatus of Claim 18, wherein the parameter is at least one of: a dimension of a section of the part; a thickness of a coating applied to the section of the part; and a thickness of a plurality of coatings applied to the section of the part.

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26. The apparatus of Claim 18, wherein the excess coating reducer means includes an air mover.

27. A coating apparatus comprising: 
10 a rotatable part support;
at least one atomizing sprayer positioned adjacent to the part support;
a coating communication line and an air communication line connected to each sprayer;
15 a part measurer including a laser generator and a laser receiver positioned on opposing sides of the part support and operable to measure a dimension of a section of a part supported by the part support and being coated by the sprayer based on said measurements and a desired dimension of the section of the part;
20 a laser generator housing including a transparent member which protects the laser generator mounted in said housing;
a first excess coating reducer positioned adjacent to the transparent member of said laser generator housing;
a laser receiver housing including a transparent member which
25 protects the laser receiver mounted in said housing;
a second excess coating reducer positioned adjacent to the transparent member of laser receiver housing;
an exhaust duct positioned adjacent to the part support;
a display device operable to display the dimension
30 measurements of the section of the part.

28. The apparatus of Claim 27, wherein each of the sprayers is operable to apply a different coating to the section of the part.

29. The apparatus of Claim 27, wherein the coatings include a base
5 coating, a middle coating and a top coating.

30. The apparatus of Claim 27, wherein each of the sprayers includes a spray control which enables the sprayers to apply the coatings at different rates.
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31. The apparatus of Claim 27, wherein the first excess coating reducer includes an air mover.

32. The apparatus of Claim 31, wherein the second excess coating
15 reducer includes an air mover.